Idaho National Engineering Laboratory

May 15, 1995

Ms. Lisa A. Green
U.S. Department of Energy
Idaho Operations Office
850 Energy Drive, MS 1117
Idaho Falls, Idaho 83401-1563

WAG 3 INVESTIGATIVE-DERIVED WASTE AQUIFER WELL PURGE WATER-KLF-159-95

Dear Ms. Green

LITCO has proposed that the investigative-derived waste purge water generated from the Snake River Plane Aquifer (SRPA) wells be discharged to the soil during the WAG-3 Comprehensive RI/FS sampling project (supporting documentation is provided in Attachment 1). The practice of discharging purge water to the soil is both protective of human health and the environment and cost-effective.

If you have any questions or require further information please contact Dennis Raunig at 526-5501 or myself at 526-1559.

Sincerely,

Kathleen L Falconer

Kathleen L. Falconer, Director
Environmental Restoration

DER:

Attachment

cc: Talley W. Jenkins, DOE-ID, MS 1117

bcc with attachment: R. D. Greenwell, MS 3953
A. H. Owen, MS 3921
T. J. Meyer, MS 3953
D. E. Raunig, MS 3953
R. R. Rodriquez, MS 3953
[redacted]
Kathleen L. Falconer File

'95 MAY 18 P3:04

NOTEGRAM

To : Talley W. Jenkins
From : Dennis Raunig
Date : May 15, 1995
Subject: Recommended Approach for Managing WAG-3 Investigative-Derived Waste -

Reference: James L. McAnally to Alice C. Williams External Correspondence March 18, 1993 (JLM-251-93).

This correspondence describes the recommended approach for managing aqueous radioactive Investigative Derived Waste (IDW), which is being generated during the WAG 3 Comprehensive RI/FS ground water sampling project and outlines the recommended disposal process for purge water generated from the wells completed in the Snake River Plain Aquifer (SRPA).

In accordance with the Environmental Restoration Strategy for On-Site Management of Investigative-Derived Waste (JLM-251-93), radioactive aqueous IDW that cannot be returned to its source will be containerized and stored for future treatment or disposal if it is determined based on historical information, field screening, or analytical results that radiological contaminant levels exceed the maximum permissible concentrations for radionuclides, as defined by 10 CFR Part 20 or the Derived Concentration Guides (DCGs), as specified by DOE Order 5400.5, whichever is more stringent. IDW aqueous liquids containing radioactive contaminants will use the protectiveness criteria detailed below for each of the contaminants in order to determine appropriate management strategies for purge water generated during sampling of the aquifer wells.

DCG Release Limits

Tc-99	100,000 pCi/L
Sr-90	1,000 pCi/L
H3	2,000,000 pCi/L,

10 CFR Part 20 Release Limits

Tc-99	60,000 pCi/L
Sr-90	500 pCi/L
H3	1,000,000 pCi/L,

A fraction of the perched water bodies at the ICPP have been determined to have contaminant concentrations near or greater than the release limits. Purge water from the perched water wells that are scheduled to be sampled during the WAG 3 Comprehensive RI/FS field season will be containerized, sampled, and disposed of in accordance with INEL radiological control guidelines.

Historical contaminant concentrations from aquifer wells that are scheduled to be sampled during the WAG 3 Comprehensive RI/FS are below the release limits identified above. The following attachment (Tables 1 and 2) identifies aquifer wells that are scheduled to be sampled during the WAG 3 Comprehensive RI/FS field season. Table 1 Identifies aquifer wells that are located outside the perimeter fence at the ICPP. Table 2 Identifies aquifer wells that are located within the fenced boundaries of the ICPP. Included in the tables are the most recent Sr-90 and H3 data. Analysis results of Tc-99 is not included on the tables, however the greatest contaminant concentration detected in an aquifer well was 159 pCi/L in MW-18. All aquifer wells that are scheduled to be sampled indicate contaminant concentrations less than the above mentioned release limits and contain no detectable hazardous or RCRA listed waste. Based on current IDW management practice as specified by JLM-251-93, it is appropriate to release the aquifer well purge water on to the soil near the wells.

If you have any questions or require further information, please contact Dennis E. Raunig at 526-5501.

Attachment

Snake River Plain Aquifer Wells Included in the WAG 3 RI/FS

Table 1. Aquifer wells located outside the ICPP.

Well	Inside Fence?	Well Depth (feet)	Water Depth (feet)	Water Height (feet)	Well Dia (feet)	Purge Volume (gallons)	Water Quality Results (USGS Sampling) Tritium (pCi/L)	Sr-90 (pCi/L)	Sample Date
CPP-4	N	700	456.3	243.7	1.33	7618	ND	ND	Apr-94
LF2-08	N	495	474.9	20.1	0.50	89	NA	NA	
LF2-09	N	497	476.5	20.5	0.33	40	NA	NA	
LF2-10	N	765	482.0	283.0	0.50	1250	6,500	ND	Nov-94
LF2-11	N	499	470.2	28.8	0.33	57	28,500	ND	Oct-93
LF2-12	N	490	475.5	14.5	0.33	28	NA	NA	
LF3-08	N	510	486.0	24.0	0.50	106	NA	NA	
LF3-09	N	500	485.1	14.9	0.33	29	26,000	ND	Jul-94
LF3-10	N	501	486.0	15.0	0.33	29	NA	NA	
LF3-11	N	492.2	477.7	14.5	0.50	64	16,600	6	Oct-93
USGS 111	N	595	468.3	126.7	0.67	995	10,500	ND	Oct-94
USGS 112	N	563	474.7	88.3	0.67	693	14,800	28	Oct-94
USGS 113	N	564	472.1	91.9	0.50	406	12,200	17	Jul-94
USGS 114	N	562	467.5	94.5	0.50	418	24,200	ND	Jul-94
USGS 115	N	581	465.8	115.2	0.50	509	3,400	ND	Oct-94
USGS 116	N	580	462.1	117.9	0.50	521	6,000	ND	Jul-94
USGS 121	N	475	457.8	17.2	0.75	179	ND	ND	Apr-94
USGS 122	N	475	461.5	13.5	0.25	16	17,900	ND	Nov-94
USGS 123	N	475.3	466.5	8.8	0.75	97	26,400	37	Oct-94
USGS 34	N	700	475.9	224.1	0.67	1760	4,500	ND	Apr-94
USGS 35	N	578.5	476.6	101.9	0.58	613	5,200	ND	Oct-94
USGS 36	N	567.1	476.4	90.7	0.50	401	7,000	14	Oct-94
USGS 37	N	573	475.5	97.5	0.67	766	18,500	12	Apr-94
USGS 38	N	729	476.1	252.9	0.33	497	15,400	32	Apr-94
USGS 39	N	571.9	478.0	93.9	0.50	415	5,300	ND	Oct-94
USGS 43	N	676	461.7	214.3	0.50	947	7,700	ND	Apr-94
USGS 44	N	650	464.2	185.8	0.50	821	ND	ND	Oct-94
USGS 45	N	651.2	466.2	185.0	0.50	817	ND	ND	Oct-94
USGS 46	N	650.9	462.8	188.1	0.50	831	3,300	17	Oct-94
USGS 51	N	659	462.1	196.9	0.50	870	20,700	ND	Oct-94
USGS 57	N	732	469.9	262.1	0.50	1158	15,200	27	Oct-94
USGS 59	N	657	460.1	196.9	0.50	870	3,500	11	Nov-94
USGS 67	N	698	459.4	238.6	0.50	1054	26,200	20	Oct-93
USGS 77	N	610	469.3	140.7	0.50	622	28,700	ND	Oct-94
USGS 82	N	700	455.2	244.8	0.67	1922	ND	ND	Oct-94
USGS 84	N	505	485.8	19.2	0.50	85	4,300	ND	Apr-94
USGS 85	N	637	486.0	151.0	0.50	667	11,500	ND	Oct-94

Table 2. Aquifer wells located inside the ICPP.

Well	Inside Fence?	Well Depth (feet)	Water Depth (feet)	Water Height (feet)	Well Dia (feet)	Purge Volume (gallons)	Water Quality Results (USGS Sampling) Tritium (pCi/L)	Sr-90 (pCi/L)	Sample Date
CPP-1	Y	576.8	459.1	117.7	1.33	3679	ND	ND	Apr-94
CPP-2	Y	600.3	460.4	139.9	1.33	4373	ND	ND	May-94
MW-18	Y	479	464.0	15.0	0.33	38	17,300	145	Dec-94
USGS 40	Y	679	461.4	217.6	0.50	961	7,300	26	Jul-94
USGS 41	Y	674.4	462.4	212.0	0.50	936	2,600	14	Oct-94
USGS 42	Y	678.5	462.7	215.8	0.50	953	2,200	10	Oct-94
USGS 47	Y	652	458.8	193.2	0.50	853	4,900	44	Apr-94
USGS 48	Y	750	463.0	287.0	0.50	1268	5,800	27	Oct-94
USGS 49	Y	656	455.5	200.5	0.50	886	20,400	5	Oct-93
USGS 52	Y	650	456.2	193.8	0.50	856	6,200	11	Oct-94

ND = Not Detected.
NA = Not Available.